

REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-3 and 6-31 are presently active in this case. The present Amendment amends Claims 1-3, 6-8, 13-15 and 19, and adds new Claims 21-31 without introducing any new matter.

The outstanding Office Action objected to Claims 1-3, 6-8 and 15 because of informalities. Claims 8, 13 and 14 were rejected under 35 U.S.C. §112, second paragraph, as indefinite. Claims 1 and 20 were rejected under 35 U.S.C. §102(b) as anticipated by Arnold et al. (U.S. Patent No. 5,908,997, herein "Arnold"). Claims 1-3 and 6-19 were rejected under 35 U.S.C. §102(e) as anticipated by Ezer et al. (U.S. Patent No. 6,275,239, herein "Ezer").

In response to the objection to Claims 1-3, 6-8 and 15, these claims are amended to delete "device" for consistency. Since the changes are only of clerical nature, they are not believed to raise any question on new matter.

In response to the rejection of Claims 8 and 13-14 under 35 U.S.C. §112, second paragraph, Claim 8 is amended to delete "the plurality of." Claim 13 is amended to recite "wherein the control processor is further configured to save data stored in the internal memory from the internal memory to the external memory if determined to be unused for a long time by the control processor."¹ Claim 14 is amended to recite "wherein the control processor is further configured to release a storage region of the internal memory occupied by the data stored in the internal memory or a program if the data stored in the internal memory or the program becomes unnecessary."² In view of amended Claims 8 and 13-14, it is believed that all pending claims are definite and no further rejection on that basis is anticipated. If, however, the Examiner disagrees, the Examiner is invited to telephone the

¹ Finds non-limiting support in the Specification as originally filed, for example at page 22, lines 15-24.

² Idem from page 22, line 25 to page 23, line 23.

undersigned who will be happy to work with the Examiner in a joint effort to derive mutually acceptable language.

In order to vary the scope of protection recited in the claims, new Claims 21-31 are added. New Claims 21-23 recite the same features as Claim 20, but depend upon Claims 15, 17 and 19, respectively. New Claim 24 depends upon Claim 1 and recites “wherein the internal memory includes an instruction memory and a data memory, and at least two parallel busses lead from the instruction memory and the data memory to the coprocessor.”³ New Claim 25 depends upon Claim 15 and recites “at least two parallel busses lead from the instruction memory and the data memory to the coprocessor.”⁴ New Claim 26 depends upon Claim 17 and recites “transferring the programs and the audio data by at least two parallel busses from the internal memory to the coprocessor.”⁵ New Claim 27 depends upon Claim 26 and recites “wherein said storing the program and the audio data in the internal memory, the audio data is stored to a data memory, and the programs are stored to an instruction memory.”⁶ New Claim 28 depends upon Claim 19 and recites features regarding storing and transferring the program module and the to-be-processed data.⁷ New Claim 29 depends upon Claim 28 and recites “the internal memory includes an instruction memory and a data memory, and wherein said storing, the to-be-processed data is stored to the data memory, and the program module is stored to the instruction memory.”⁸ New Claims 30-31 depend upon Claims 1 and 15, respectively and recite features regarding an audio input/output interface

³ Finds non-limiting support in Applicant’s disclosure, for example at page 11, lines 7-19 and in corresponding Figure 1.

⁴ Idem.

⁵ Idem.

⁶ Idem.

⁷ Idem.

⁸ Idem.

and an internal bus.⁹ Since the new claims find non-limiting support in the disclosure as originally filed, they are not believed to raise a question of new matter.¹⁰

In response to the rejection of Claims 1 and 20 under 35 U.S.C. §102(b), Applicant respectfully requests reconsideration of this rejection and traverses the rejection, as discussed next.

Briefly recapitulating, Applicant's invention, as recited in Claim 1, relates to an audio processor which processes an input data stream via an external memory. The audio processor includes: a control processor to fetch in, when executing one of divided procedures of an audio process, a program and audio data corresponding to a next one of the procedures from the external memory which stores programs and a group of data used for sequentially executing the divided procedures of the audio process; an internal memory to store the program and audio data fetched from the external memory by the control processor and corresponding to the one and the next one of the procedures; a coprocessor to subserve the control processor to subject audio data of the input data stream to the divided procedures of the audio process based on the program fetched by the control processor. Remaining independent Claims 15, 17 and 19 recite similar features in the context of a data processing apparatus (Claim 15) and an audio data processing method (Claims 17 and 19). As explained in Applicant's Specification at page 6, lines 3-6, the present invention can provide an audio processor for processing audio data of an input data stream using programs and data fetched from an external memory device.

Turning now to the applied reference, Arnold discloses an electronic music instrument system, with a multimedia audio subsystem and a MIDI audio subsystem.¹¹ However, Arnold does not teach a control processor to fetch in a program and an audio data. Arnold

⁹ Finds non-limiting support in Applicant's disclosure as originally filed, for example at page 9, lines 11-13 and in corresponding Figure 1.

¹⁰ See MPEP 2163.06 stating that "information contained in any one of the specification, claims or drawings of the application as filed may be added to any other part of the application without introducing new matter."

¹¹ See Arnold in columns 9 and 10 and in corresponding Figure 2.

merely discloses an audio mixer and processor 80 associated with a MIDI coprocessor 94, and Arnold suggests that the multimedia audio subsystem 34 is preferably constructed to process audio signals obtained from a variety of digital and analog sources.¹² However, the program used to process the audio data are resident within the Arnold processor and Arnold does not teach fetching audio data and a program by which the fetched audio data are processed. Arnold is silent on an audio processor that fetches in program and audio data in parallel with the execution of such programs. Further, Arnold states that the MIDI sound module 86 for generating analog audio signals receives instructions from various components of the music information management system 26.¹³ The mere reception of instructions from various sources also does not anticipate the claimed invention. Accordingly, a midi sound module receiving instructions to generate analog audio signals, or a multimedia audio subsystem processing various audio input sources, as disclosed by Arnold, is not a control processor that fetches in a program and an audio data corresponding to a next one of divided procedures from the external memory, when executing one of divided procedures of an audio process, as claimed by Applicant.

Therefore, the applied reference fails to teach or suggest every feature recited in Applicant's claims, so that Claims 1 and 20 are believed to be patentably distinct over Arnold. Accordingly, Applicant respectfully traverses, and requests reconsideration of, the rejection based on Arnold.¹⁴

In response to the rejection of Claims 1-3 and 6-19 under 35 U.S.C. §102(e) as anticipated by Ezer, Applicant respectfully requests reconsideration of this rejection and traverses the rejection. The applied reference Ezer discloses a media processor for

¹² See Arnold at column 6, lines

¹³ See Arnold at column 6, lines 25-28.

¹⁴ See MPEP 2131: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference," (Citations omitted) (emphasis added). See also MPEP 2143.03: "All words in a claim must be considered in judging the patentability of that claim against the prior art."

- Application No. 09/915,348
Reply to Office Action of March 14, 2005

performing 3-D graphics, video, and audio functions, including a digital bitstream processor and a digital signal processor.¹⁵ Ezer's media processor further includes an IO controller 104 which is able to transfer data between the memory buffers and IO interfaces, including video and audio.¹⁶ However, Ezer does not teach or suggest Applicant's claimed feature regarding a control processor fetching in a program and an audio data corresponding to a next one of divided procedures from the external memory, when executing one of divided procedures of an audio process, and an *internal memory to store the program and audio data fetched from the external memory*. Ezer specifically teaches that the IO controller 104 transfers data between *memory buffers and IO interfaces*. Further, Ezer teaches that memory controller 205 optimizes DRAM block transfer for the CPU 101, audio video and IO ports 204.¹⁷ Accordingly, transferring data from a DRAM to a CPU or an IO port, as taught by Ezer, *is not* fetching in a program data and an audio data from an external memory, and storing the program data and audio data to the internal memory, as claimed by Applicant.

Furthermore, new dependent Claims 21-31 recite features that are neither disclosed by Arnold nor by Ezer, taken individually or in combination, and therefore these claims are also believed to be patentably distinct over the applied references.

Consequently, in view of the present Amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 1-3 and 6-31 is earnestly solicited.

¹⁵ See Ezer in the Abstract.

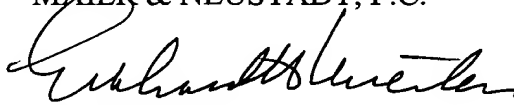
¹⁶ See Ezer at column 27-40 and in corresponding Figure 1.

¹⁷ See Ezer at column 3, lines 57-64 and in corresponding Figure 2.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicant's undersigned representative at the below listed telephone number.

Respectfully submitted,

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